COMMUNITIES FOR A BETTER ENVIRONMENT

Via U.S. Mail and email: docket@energy.state.ca.us

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July 1, 2005

2005 Integrated Energy Policy Report Committee
California Energy Commission
c/o California Energy Commission Docket Office
Attn: Docket 04-IEP-1A
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

RE: CBE Comments on "Docket 04-IEP-1A and 2005 Energy Report: Comments Petroleum Infrastructure Environmental Performance Report Workshop."

Dear CEC IEPR Committee:

This letter is written on behalf of Communities for a Better Environment ("CBE"). CBE is an environmental health and justice organization with offices in Huntington Park and Oakland, California. CBE works directly with communities of color who live in heavily industrialized urban areas such as Wilmington and Contra Costa County, surrounded by oil refineries and other facilities that release toxic pollution. CBE has been working on oil refinery issues for more than twenty years, and submits these comments on the California Energy Commission's Petroleum Infrastructure Environmental Performance Report (the "Report").

The Report fails in its purpose "to provide state, regional and local decision makers with information on the nature and extent of those issues, how they have been addressed in the past and what future trends may be expected with changes or expansion of the state's petroleum infrastructure facilities."[1] The report omits well-known important environmental impacts and makes overly general, misleading or incorrect statements. The report also attempts to reassure the public that pollution from the petroleum industry is declining while downplaying the magnitude of that pollution stemming from oil refineries.

The report ignores the severe drinking water contamination problem caused by the generation and use of MTBE as additive in gasoline. The problems caused by MTBE are so severe that Governor Davis issued an Executive order banning its use as a gasoline additive in California.[2] The report fails to even mention a well-known refinery accident that killed four workers in a Bay Area refinery and led to a shut down and investigation of that refinery. The report also fails to mention simple and easy to understand facts such

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[1] Committee Workshop Notice for June 20, 2005.

[2] Exec. Order D-5-99 (Mar. 25, 1999). http://www.arb.ca.gov/fuels/gasoline/carfg3/eod0599.pdf. Governor Davis subsequently issued a second executive order, Exec. Order D-52-02 (Mar. 14, 2002).

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as that oil refineries discharge more chemicals to the air and water of the Bay Area than any other industrial source.[3] Simple facts such as this are either absent or buried under pages of general statements about downward trends in this pollution. Nowhere does the report mention that these declining trends have often resulted from pressure by environmental and community groups and have been achieved in the face of stiff and dogged opposition by the oil industry.[4]

By downplaying or omitting negative information about the environmental impact of the industry, the report reveals the CEC's intent to become the taxpayer funded lobbyist for the petroleum infrastructure industry.[5] During his testimony at the workshop on the Report, Joe Sparano, President of the Western States Petroleum Association, approvingly noted that the "Energy Commission report generally has given our industry a good environmental performance report card or rating for the years that were reviewed. I believe that's 1985 through 2004."[6] Although Mr. Sparano's impression that the CEC has given the oil industry a favorable report is correct, the conclusions and presentation of the facts in the report provide an incorrect picture of the environmental performance of the oil industry.

By itself, the drinking water contamination problem caused by MTBE is more than sufficient to give the oil industry an unfavorable environmental report card, but the report greatly underplays this catastrophic contamination of the state's water supplies. The report mentions MTBE only in the context of the regulatory changes affecting the petroleum industry, and states briefly that MTBE has been found in groundwater supplies in the state. In fact, as of 2005, MTBE has been found in 144 water systems in California that together serve over 32 million people.[7] The odor and taste of MTBE at a concentration of 2 parts per billion renders water undrinkable.[8] Among other acute effects, MTBE causes headache, nausea, coughing, vomiting, burning sensations in the nose and throat, and disorientation.[9] EPA has classified MTBE as a known animal

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[3] Jane Kay, *Refineries top polluters on EPA list in Bay Area*, S.F. Chronicle at A11, May 24, 2002. (Attachment A, submitted with paper copy of comments).

[4] As one example, selenium discharges to the San Francisco Bay have decreased dramatically only as a result of action by CBE. CBE sued both Unocal and Exxon for illegally discharging selenium from their refineries into San Francisco Bay. Both Unocal and Exxon settled with CBE, agreeing to come into compliance with their permit limits for selenium and to pay nearly five million dollars to foundations working on local water quality issues. *See* http://www.cbecal.org/Legal/2003victories.shtml.

[5] This apparent bias is also evidence by the fact that the CEC continues to have Commissioner Boyd sit as a member of the subcommittees addressing the petroleum oil infrastructure. As CBE explained in its February 28, 2005 letter to the CEC, Commissioner's Boyd marriage to a lobbyist for the Western States Petroleum Association should disqualify Commissioner Boyd from participating in proceedings related to oil industry. The CEC has not responded to CBE's February 28, 2005 letter, and apparently continues to ignore this issue.

[6] June 20, 2005 Committee Workshop on PIEPR at 62.

[7] Environmental Working Group. *MTBE contamination is soaring.* (2005) ("EWG MTBE Report") http://www.ewg.org/reports/oilandwater/part2.php.

[8] *EWG MTBE Report.*

[9] Keller, Arturo, et al., *Health and Environmental Assessment of MTBE, Volume I: Summary and Recommendations* at 21 (Nov. 1998). http://tsrtp.ucdavis.edu/mtberpt/vol1.pdf.

carcinogen and a probable human carcinogen.[10] In workers exposed to higher quantities, MTBE presents serious neurological and respiratory risks.[11]

When MTBE is discovered in a water source, the water system must dilute the contaminated water with water from another source, stop drawing from that source altogether, or treat the water using extremely expensive technologies.[12] Thus, MTBE contamination exacerbates the state's already serious water problems, particularly in drought years. The cost to California communities for protecting and restoring their water supplies is enormous, and many of these communities are trying to recover this cost from the oil companies.[13] MTBE contamination is widely considered "an environmental and economic disaster of monumental proportions,"[14] and CEC's failure to provide any meaningful discussion of the "nature and extent" of the MTBE crisis in California is inexcusable, especially given the resources other state agencies have spent analyzing and addressing the problem.[15]

CEC also omits any mention of the conduct of oil companies with regard to MTBE. The oil companies knew about the potential water contamination issues associated with MTBE and still used it.[16] Then they resisted public pressure to discontinue the use of MTBE long after the groundwater contamination problem was recognized. Currently, the industry is asking Congress to give it a national waiver of liability for the water contamination caused by MTBE.

The report fails to provide the public and decision-makers with complete and reliable information. CEC makes unsupported statements about the absence of environmental impact, or relies on undependable or clearly inadequate data sources, such as in its evaluation of hazardous materials safety.

CEC Misrepresents the Safety Record of California's Refineries

CEC's chapter on Safety and Hazardous Materials Management fails to discuss major refinery accidents and relies on incomplete sources of data about accidents. While the report claims to evaluate the industry's safety record from 1990 to 2003, it does not

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[10] CBE, *Don't Drink the Water: A CBE Report on the True Cost of MTBE* at 8 (Mar. 1999) (Attachment B, submitted with paper copy of comments); Keller, et al. at 23-24.
[11] *Don't Drink the Water* at 8.
[12] *EWG MTBE Report*; Keller, et al. at 12.
[13] In 2002, the city of South Lake Tahoe obtained a $60 million settlement from four companies including Shell and Texaco to pay for cleanup of contaminated water supplies. A year later, Shell, Exxon, ChevronTexaco and 15 other companies settled with Santa Monica, committing $200 million for a filtration system to remove MTBE from the city's water supplies. *EWG MTBE Report.*
[14] *Don't Drink the Water* at 15.
[15] The state report written by Keller, et al. was funded by the state legislature through a grant proposal of $500,000. http://tsrtp.ucdavis.edu/MTBE_RFP/RFP.html.
[16] *EWG MTBE Report.* A jury awarded damages for cleanup of the South Lake Tahoe water system after litigants produced industry documents showing that the industry knew MTBE in fuel would contaminate groundwater.

even mention the fire and explosion at Tosco's Avon Refinery in February of 1999 that left four employees dead and one seriously injured. This well-known major accident occurred because Tosco had failed to isolate the naptha piping from the operating process prior to conducting maintenance work.[17] OSHA inspectors classified almost half of the Tosco's workplace safety violations as willful because of evidence that the management knew of unsafe conditions and failed to correct them. A safety evaluation by the Arthur D. Little management consulting company also revealed that Tosco managers were insufficiently committed to safety at the refinery, and that this indifference resulted in inadequate training, monitoring and accountability for safety procedures.[18] CEC's exclusion of this major accident gives a false impression that refineries are not dangerous to employees or the community, when in fact, major refinery incidents in Contra Costa County have occured as often as once every five weeks.[19] These incidents often require evacuations of elementary schools, shelter-in-place warnings, hospitalization of residents and workers, oil residue on nearby houses and cars, and other harmful effects.[20]

The explosion last year of an isomerization unit at the BP Texas City Refinery was another reminder of the dangerous nature of refineries. The explosion killed 15 employees, harmed 170 others, and ripped a hole in a nearby chemical storage tank, releasing massive amounts of carcinogenic benzene into the community.[21] Subsequent investigation determined that the causes were inadequate training or poor judgment by refinery employees.[22] The investigation also found that the lack of a bypass around check valves that would have prevented the accident was the result of inadequately-written industry specifications for the equipment.[23] While this accident was outside California and therefore formally outside the scope of CEC's report, it speaks to the inherently dangerous nature of refineries and the need for stringent regulations of safety at these facilities, for the sake of both the public and the workers.

The CEC's sole reliance on the National Response Center's Incident Reporting Information System (IRIS) database to evaluate the industry's performance in hazardous materials management is misplaced. CEC's own research revealed that the IRIS database did not contain reports about three major accidents, calling into question whether the database is a reliable and comprehensive source. Furthermore, CEC staff screened out

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[17] *Cal/OSHA Issues Highest Penalty In Its History Against Tosco*, IR #99-09 (Aug. 4, 1999) http://www.dir.ca.gov/DIRNews/1999/IR99-09.html.

[18] Arthur D. Little, *Initial Safety Evaluation of the Tosco Avon Refinery*, at ES-3 (May 10, 1999) http://www.acusafe.com/Incidents/Tosco-Avon1999/TOSCO_Final_ADL_InitialSafetyReport_5-99.pdf.

[19] CBE, et al., *Rising Risks to Refinery Communities: The Troubling Trend of Toxic spills in Contra Costa County California* at 1 (Jul. 8, 1997). (Attachment C, submitted with paper copy of comments).

[20] *Rising Risks*, Tables 6 & 7.

[21] *Texas City Explosion: 2005 Houston Chronicle Special Report.* http://www.chron.com/content/chronicle/special/05/blast/index.html.

[22] BP, *Fatal Accident Investigation Report* (May 12, 2005). http://www.bpresponse.org/external/index.cfm?cid=946&fuseaction=EXTERNAL.docview&documentID=71369.

[23] BP, *Report on 2004 Accident: Root Cause Analysis* (2004) http://www.chron.com/content/chronicle/special/05/blast/index.html#.

incidents for which initial reports did not indicate potential for public impact. However, a report by CBE and Contra Costa Building and Construction Trades Council ("CCBCTC") found that industrial facilities frequently underestimated the severity of problems in their initial reports to Contra Costa County authorities.[24] This tendency may mean that the initial reports in IRIS are not a good indicator of the true impact of accidents on the community. The CBE/CCBCTC report also found that in several cases in 1999 and 2000, the Chevron Refinery in Richmond did not report serious incidents until the neighbors or law enforcement alerted the county to the problem—again suggesting that the self-reported nature of the data in IRIS is not adequate.

The report indicates that CEC conducted some research beyond the IRIS database, but this does seem to have encompassed some readily available sources of information such as the official incident report records kept by the Contra Costa County Hazardous Materials Division or any of the reports by environmental groups such as CBE. While CEC found only 18 reported incidents from 1990 through 2003, the Contra Costa County reports reveal a much higher incidence of toxic releases and explosions. The CBE/CCBCTC report cited above inspected these records and found 23 major accidents in 1999 and 2000, at *Contra Costa refineries alone*.[25] By failing to consult a broader range of sources about the safety of refineries and other petroleum infrastructure facilities, the CEC provided an inaccurate picture of the safety of refineries.[26]

CEC Makes Misleading Statements About the Industry's Impact

CEC's report also contains misleading statements and presentations of facts. For example, in its discussion of the downward trend in air emissions, CEC states that "only the BAAQMD is projecting increases in air emissions from petroleum infrastructure."[27] Refineries in the Bay Area account for 30% of the state's refinery capacity,[28] and so predictions that emissions will increase should not be trivialized by being presented as an exception to an otherwise positive trend. Furthermore, the fact that Bay Area emissions are predicted to increase is not even mentioned in the executive summary, which broadly states that emissions are expected to decrease. CEC also does not reveal that the South Coast Air Quality Management District's (SCAQMD) prediction that emissions would remain flat is based on the assumption that the district will strengthen regulations in

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[24] Communities for a Better Environment and Contra Costa Building and Construction Trades Council, *No Accident! How Industry and Government Agencies Are Failing to Prevent Chemical Spills, Major Accidents and Serious Incidents: 1999-2000*, at 11 (2001) (Attachment D, submitted with paper copy of comments).

[25] *No Accident!* at 8.

[26] CEC could also have consulted reports by CBE on other topics relevant to this environmental performance analysis, such as dioxin pollution from refineries, a topic which CEC does not even mention. CBE has authored a comprehensive report on dioxin releases by refineries that brings together disparate sources of information about dioxins in air, water and biological systems. *See Dioxins and Refineries: Analysis in the San Francisco Bay Area* (Aug. 2000) (Attachment E, submitted with paper copy of comments).

[27] *CEC Report* at 7.

[28] *CEC Report* at 45, Figure 5-1.

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response to increasing emissions from the expanding infrastructure.[29] By omitting this important information, CEC conceals the likelihood that SCAQMD will be able to maintain emissions levels only if oil companies are not able to weaken new regulations for refinery emissions.

The executive summary also contains misleading and generally uninformed statements about soil and groundwater contamination. Rather than relating the report's later assertion that "at least half of the refineries in California are known to have extensive soil and groundwater pollution,"[30] the executive summary states only that soil and groundwater contamination . . . is being remediated." This statement implies that remediation of all contaminated sites is nearly complete and that no risk will remain after remediation. It tells the reader nothing about the extent and longevity of the contamination problem. The purpose of this report is to provide information to decision-makers, not to simply reassure using overly general and unsupported statements about the absence of environmental impact.

CEC also uses misleading units of analysis. For example, CEC shows refinery emissions as a percentage of each district's emissions in a way that minimizes their apparent significance. While BAAQMD encompasses nearly nine counties, the petroleum infrastructure facilities are concentrated in the western part of Contra Costa County. So while these facilities may be minor contributors to pollution over the entire district, they are significant contributors to the air pollution for the local community. The unit of analysis for pollutants with a local effect, such as ozone and particulate matter, should be the nearby communities, not the entire district. In another instance, CEC uses the state as the unit of analysis for percentage of air toxics emitted by stationary sources (including refineries).[31] Air toxics such as diesel particulates and benzene have acute, local effects. CEC should be evaluating refineries' relative contribution to toxic air pollution within the communities directly affected.[32]

Unnecessary Statements Detract from Report's Informational Function

CEC includes commentary that is irrelevant to the scope of the report and depart the report's purpose of informing decision-makers and helping to prepare for futures changes in the petroleum industry. These extraneous sections also reveal an inappropriate bias towards the petroleum industry.

CEC's chapter on hazardous materials begins with a discussion of the explosion of the Union Carbide facility in Bhopal, India. This unnecessary discussion misleads readers in several ways that exemplify the problems with CEC's report. First, CEC advances the theory that the Bhopal accident was the result of an intentional act by an

[29] Statement of Dr. Chris Tooker, June 20, 2005 Committee Workshop on PIEPR at 29.
[30] *CEC Report* at 87.
[31] *CEC Report* at 66.
[32] For instance, Chapter 4 of the report evaluates the community demographics within a six-mile radius of the refineries. This is a more appropriate unit of analysis for emissions.

employee, rather than poor management. Union Carbide promoted the theory that the root cause of the accident was sabotage, but has never identified the employee suspected or entered any evidence into court showing sabotage.[33] Plant workers and managers have repeatedly contested the sabotage theory and pointed to specific operational errors made as a result of reductions in the staff responsible for safety at the plant.[34]

CEC speculates this country's hazardous materials regulations as a reaction to Bhopal, with the implication that those regulations are unfounded if the Bhopal explosion was not an accident. This speculation is historically inaccurate and has no place in an informational report. Congress passed multiple statutes regulating hazardous materials between 1970 and 1980, well before the Bhopal accident in 1984. These regulations were more likely motivated by domestic accidents such as the Texas City chemical explosion in 1947, the sinking of a chlorine barge on the Mississippi River in 1962, and the nuclear accident at Three Mile Island.[35] CEC may be correct that releases due to terrorist and intentional acts are increasingly likely, but this does not mean that the inherent risk of accidental releases has lessened and that the regulations protecting against accidents can be revised accordingly, as CEC suggests.

Chapter 8 contains an extensive discussion of spending by refineries on hazardous waste management and site remediation. The cost to the industry of complying with environmental regulations is not relevant to this report because it does not inform decision-makers about the scope of the environmental impact of the petroleum industry. This information should be replaced by data on the number of sites needing soil and groundwater remediation, the type of remediation being conducted, and the status of these projects. This data is critical to understanding the extent of the contamination caused by the petroleum industry. In contrast, the cost of remediation tells the public very little about how remediation is actually progressing, or about how the risks of contamination are being reduced.

In its discussion of the cancer risks posed by releases from petroleum facilities, CEC editorializes about the insignificance of a 10 in one million cancer risk compared to Americans' background likelihood of suffering from cancer. While it may be the opinion of CEC staff that federal regulation of environmental toxics is overly conservative, this opinion is irrelevant to the purposes of the report. EPA has determined that ten in one million is the threshold for unacceptable risk, and it is not appropriate for CEC to downplay incidents where emissions exceed that threshold.

CEC Does Not Adequately Support Analysis with Data

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[33] Amnesty International. *Clouds of Injustice: Bhopal disaster 20 years on* at 40-41 (2004) http://web.amnesty.org/library/pdf/ASA200152004ENGLISH/$File/ASA2001504.pdf.
[34] Amnesty International at 41.
[35] *An Interview with Jack McGraw: The Aftermath of Bhopal.* EPA Journal, Jan. /Feb. 1985. http://www.epa.gov/history/topics/foreign/01.htm. Jack McGraw was Acting Assistant Administrator for Solid Waste and Emergency Response at EPA, and had headed an agency task force on Bhopal.

CEC staff should focus its efforts on bringing together the information necessary to comprehensively describe the industry's environmental impacts. In some places, the report simply makes unsupported statements or refers readers to unhelpful sources. For example, CEC states that pipelines do not normally emit significant amounts of criteria pollutants without referring to any supporting data. If there are no such data, then CEC should not make this claim. When discussing the effects of a pipeline break in the Suisun marsh, CEC not only fails to provide a reference supporting its statements, but actually refers the reader to an irrelevant website about a spill in southern California. This mistake reveals carelessness on the part of the CEC that is inexcusable for a report that is intended to inform decision-makers.

In other places, the CEC report acknowledges the lack of data to provide a solid understanding of the environmental impact of the industry (e.g., volumes of hazardous waste generated.) The report would benefit from a consolidated discussion of areas where data are inadequate. CEC should be completely open and transparent about weaknesses and gaps in the data rather than relying on undocumented and conclusory statements, or leaving it to the reader to search out admissions of data gaps.

A thorough assessment of the environmental impacts of California's petroleum infrastructure based on the best and most current data would be an invaluable tool for the policy discussions that will be necessary in the coming years. However, the CEC report in its current form does not serve this purpose and will not be helpful to decision-makers. CBE recommends that this report be substantially rewritten to include a more frank and comprehensive analysis of the environmental impacts of the petroleum industry.

Sincerely,

William Rostov

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Attachments

Attachment A: Jane Kay, *Refineries top polluters on EPA list in Bay Area*, S.F. Chronicle at A11, May 24, 2002.

Attachment B: CBE, *Don't Drink the Water: A CBE Report on the True Cost of MTBE* (Mar. 1999).

Attachment C: CBE, et al., *Rising Risks to Refinery Communities: The Troubling Trend of Toxic spills in Contra Costa County California* (Jul. 8, 1997).

Attachment D: CBE & Contra Costa Building and Construction Trades Council, *No Accident! How Industry and Government Agencies Are Failing to Prevent Chemical Spills, Major Accidents and Serious Incidents: 1999-2000* (2001).

Attachment E: CBE, *Dioxins and Refineries: Analysis in the San Francisco Bay Area* (Aug. 2000).

Attachment A

San Francisco Chronicle

The **San Francisco Chronicle**

MAY 24, 2002, FRIDAY, FINAL EDITION

SECTION: NEWS; Pg. A11

LENGTH: 1012 words

HEADLINE: Refineries top polluters on EPA list in Bay Area;

Discharges taint air, water and land

SOURCE: Chronicle Environment Writer

BYLINE: Jane **Kay**

BODY:
Oil **refineries** discharge the greatest amount of chemicals to the Bay Area's air and water, according to a national inventory released Thursday by the U.S. Environmental Protection Agency.

The document says the largest hazardous air emissions come from Ultramar's Golden Eagle **Refinery** in Martinez, formerly Tosco, Valero Refining Co. in Benicia, formerly Exxon, and Chevron Products Co. in Richmond.

The Bay Area's five **refineries** emit to the air a host of chemicals including ammonia, methanol, sulfuric acid, hexane, toluene and the gas additive MTBE, or methyl tertiary butyl ether.

The top dischargers to the San Francisco Bay, were listed as Valero, Chevron and Shell Oil Products US, previously called Equilon, in Martinez. They release nitrates, methanol, MTBE, ammonia, zinc, nickel and phenol, among other toxic chemicals.

Other big dischargers in the Bay Area include New United Motor Manufacturing Inc., an auto body maker in Fremont; C&H Sugar in Crockett; AXT Inc., a printed circuit board manufacturer in Fremont; U.S. Pipe and Foundry Co. in Union City; NDC, a medical instruments company in Fremont; USS-POSCO, a steel maker in Pittsburg; and Scotts-Sierra Horticultural Products Co., a chemical producer in Milpitas.

Every year, the EPA releases the Toxics Release Inventory, compiled from the companies' reports and required by the federal Emergency Planning and Community Right-to-Know Act of 1986.

The list has served as a national scorecard of how the biggest U.S. companies are doing in their quest to reduce chemical contamination.

"This program is based on the premise that communities have a right to know what's happening in their neighborhoods," said Adam Browning, inventory coordinator for EPA's western region. "People can search by facility or county or ZIP code to identify the amounts of chemicals."

For the first time, the EPA required reporting of mercury, PCBs and dioxin -- byproducts of industrial activities -- because they're particularly damaging to health and persist in the environment.

Nationwide, nearly 24,500 plants submitted documents, totaling 7.1 billion pounds of hundreds of chemicals in 2000, down 8.98 percent from 1999. Mining, coal-burning power plants and chemical and petrochemical plants produce much of the pollution.

California's 1,442 plants had a total of 75.6 million pounds, up 15 percent from 1999. Chemicals discharged to water increased by 26 percent, mainly from operations at the Samoa Pulp Mill in Humboldt County and the Equilon **refinery,** the EPA says.

And releases to land, which include licensed hazardous waste disposal, increased by 34 percent. The EPA attributes it primarily to

cleanups in the Los Angeles Harbor and military bases.

But the state's good news is that the air emissions dropped by 9 percent, in part because of additional pollution controls at an Exxon Mobil plant in Torrance and the closing of the Quebecor photography plant in San Jose.

The EPA credits increasing local, state and federal regulation for the emission reductions plus public embarrassment of making the list of top polluters.

Bill Tanner, a Valero spokesman, said, "Valero cares very much about its environmental performance, and we're committed to continuous improvement. Over the last decade, the company has cut air emissions by half."

Cameron Smyth, a Shell spokesman, said the Martinez **refinery** released 0.1 grams of dioxin and 64 pounds of mercury. "The Martinez **refinery** takes great pride in its environmental record," he said.

The inventory is available at www.epa.gov/tri.

CHART:
TOP BAY AREA POLLUTERS
Highest toxic chemical releases by Bay Area businesses to air, land and water (in pounds, except as noted)

-- Releases to air
Ultramar Inc
Golden Eagle **Refinery**, Martinez 789,188 pounds
Valero Refining Co.,
California Benicia **Refinery**, Benicia 717,919
Chevron Products, Richmond **Refinery**, Richmond 662,354
New United Motor Manufacturing Inc., Fremont 422,620
Equilon, Martinez Refining Co. 354,110

-- Releases to water
Valero Refining Co.,
California Benicia **Refinery**, Benicia 620,792
Chevron Products Co., Richmond **Refinery** 568,369
Equilon, Martinez Refining Co., Martinez 343,140
C&H Sugar Co., Crockett 316,000
Tosco, San Francisco **Refinery**, Rodeo 225,373

-- Releases to land
AXT Inc.,
printed circuit board manufacturer, Fremont 1,269,329
U.S. Pipe & Foundry Co. Inc., Union City 318,313
NDC, medical instrument manufacturer, Fremont 11,427
USS-POSCO Industries,
steel manufacturer, Pittsburg 6,669
Scotts-Sierra Horticultural Products Co.,
chemical company, Milpitas 500

-- Dioxin releases to air(x)
Tosco, San Francisco Carbon Plant, Rodeo 0.6 grams
Ultramar Inc., Golden Eagle **Refinery**, Martinez 0.2 grams
U.S. Pipe & Foundary Co. Inc., Union City 0.189 grams
Hanson Permanente Cement, Cupertino 0.186 grams
Equilon, Martinez Refining Co., Martinez 0.1 grams
(x) - Dioxin, a potent toxic chemical, is the byproduct of combustion.

Source: U.S. Environmental Protection Agency, Toxics Release Inventory, 2000

E-mail Jane Kay at jkay@sfchronicle.com.

GRAPHIC: CHART: SEE END OF TEXT

LOAD-DATE: May 24, 2002

Attachment B

Document Information

Docket Number: 04-IEP-1A

Dated: 7-1-05

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OVERSIZED FILE **Megabites** _____ 156 pages

C3E Comments on Petroleum Infrastructure Environmental Performance

MAP(S #_____

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PICTURE(S) #_____

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